4. POTENTIAL APPLICABLE OR RELEVANT AND APPROPRIATE REQUIREMENTS

4.1 Introduction/Overview

This section identifies and evaluates federal and state requirements that are potentially applicable or relevant and appropriate (ARARs) for remedial actions at the Landsburg Mine site. The ARAR identification process is based on criteria presented in WAC 173-340-710. Final ARARs will be determined in accordance with the requirements of the Agreed Order.

WAC 173-340-360(2) and 173-340-710(1)(a) require that cleanup actions conducted under the Model Toxics Control Act (RCW 70.105D) ("MTCA") shall comply with applicable federal and state laws. Applicable laws are defined as those requirements that are legally applicable, as well as those that Ecology determines to be both relevant and appropriate.

In order to be defined as a "legally applicable" requirement, the requirement must be promulgated under state or federal law and must specifically address a hazardous substance, cleanup action, location or other circumstance at the site. "Relevant and appropriate" requirements are limited to those requirements promulgated under state and federal laws that, while not legally applicable, are determined by Ecology to address circumstances sufficiently similar to those encountered at the site such that the use of the requirements is well suited to particular site conditions. WAC 173-340-710(3) also includes a limited number of regulations which are automatically considered to be relevant and appropriate requirements.

Identification of ARARs must be made on a site-specific basis and involves a two-part analysis: first, a determination is made whether a given promulgated requirement is applicable; then, if it is not applicable, a determination is made whether it is both relevant and appropriate. A requirement may be either "applicable" or "relevant and appropriate," but not both.

The following discussion focuses on the most significant potential ARARs. The full list of potential ARARs is presented and discussed in Tables 4-1 and 4-2. Potential specific regulatory limits (cleanup criteria) for groundwater, surface water, and soil are presented in Tables 4-3, 4-4, and 4-5, respectively.

4.2 ARARs Based on Federal Laws

National Primary Drinking Water Regulations - 40 CFR 141

Requirements of the National Primary Drinking Water Regulations (40 CFR 141) promulgated under the Safe Drinking Water Act (SDWA) address contamination in community water systems, which are defined as public water systems having at least 15 service connections or serving an average of at least 25 year-round residents. The primary drinking water regulations establish maximum contaminant levels (MCLs) and maximum contaminant level goals (MCLGs). MCLs are enforceable standards for specific contaminants EPA has determined have an adverse effect on human health. MCLGs, in contrast, are non-enforceable, strictly health-based standards which do not take cost or feasibility into account. Where applicable, the regulations of

the SDWA are applied at the tap. Secondary maximum contaminant levels (SMCLs) are also established pursuant to the SDWA and are set forth in 40 CFR 143.

MTCA requires that where groundwater is a current or potential future source of drinking water, cleanup levels shall be at least as stringent as the MCLs, SMCLs and non-carcinogen MCLGs established under the SDWA. Although site groundwater is not currently used for drinking water purposes, SDWA requirements are applicable. Table 4-3 summarizes the MCLs, SMCLs and non-carcinogen MCLGs for selected groundwater constituents.

Resource Conservation and Recovery Act (RCRA) - 40 CFR 260-268

RCRA provides requirements that address the generation, transport, storage, treatment, and disposal of hazardous waste. In Washington, the majority of RCRA authority has been delegated to Ecology and is implemented through the Dangerous Waste Regulations (WAC 173-303). Detailed discussion of the Washington State Dangerous Waste Regulations is presented below.

4.3 ARARs Based on State Laws

Model Toxics Control Act - RCW 70.105D

MTCA is the key governmental regulation governing the conduct of the overall investigation and cleanup process for the site and is therefore applicable. MTCA describes the requirements for selecting cleanup actions, preferred technologies, policies for use of permanent solutions, the time frame for cleanup, and the process for making decisions. The regulation specifies that all cleanup actions be protective of human health, comply with all applicable state and federal regulations, and provide for appropriate compliance monitoring.

Specific criteria for the various cleanup methods are presented in the MTCA regulations. The MTCA regulations specify that cleanup actions utilize permanent solutions to the maximum extent practicable. Although MTCA identifies a hierarchy of preferred technologies that should be evaluated for use in the cleanup action, cost may also be a factor in determining points of compliance and selection of cleanup actions. For example, if the cost of cleanup action is substantial and disproportionate to the incremental increase in protection compared to a lesser preferred cleanup action, the less preferred action may be selected.

Recent amendments to MTCA (RCW 70.105D.090) exempt remedial actions conducted pursuant to an Agreed Order or a Consent Decree from the procedural requirements of several state laws. These include the State Clean Air Act (RCW 70.94), Solid Waste Management - Reduction and Recycling Act (RCW 70.95), Hazardous Waste Management Act (RCW 70.105), Water Pollution Control Law (RCW 90.48), Shoreline Management Act (RCW 90.58), and Construction Projects in State Waters (RCW 75.20). In addition, the exemption also applies to the procedural requirements of any laws requiring or authorizing local governmental permits or approval for the remedial action. Therefore, while substantive compliance is necessary, permits and approvals are not required for remedial actions at the site. Substantive requirements are included in the Consent Decree, Agreed Order, or Enforcement Order implementing a cleanup action.

Model Toxics Control Act Cleanup Regulations - WAC 173-340

Regulations under Chapter 173-340 WAC, which implement the requirements of MTCA, are the primary regulatory vehicle under which the Landsburg Mine site RI/FS process is being conducted and are therefore applicable. These regulations establish administrative processes and standards to identify, investigate and cleanup facilities where hazardous substances have been released.

WAC 173-340-700 establishes cleanup levels for environmental media, including groundwater, soil, and surface water. This regulation also contains standards for air emissions. Three methods are presented for determining cleanup levels: Method A (routine, using tables), Method B (standard), and Method C (conditional, primarily for industrial sites). All three MTCA methods for determining cleanup levels require compliance with other federal or state ARARs, and consideration of cross-media contamination. Method A is generally used for routine cleanups with relatively few contaminants. Method A standards are presented in tables in the MTCA rule. Since it is unlikely that the cleanup at the Landsburg Mine site would be considered routine, Method A is probably not uniformly applicable to this site. However, no cleanup levels shall be more stringent than an established area background for the site.

Method B is the standard method for determining cleanup levels. Currently, Method B soil cleanup levels assume a residential use scenario, although Ecology may develop Method B industrial soil cleanup standards. Method B groundwater cleanup standards do not currently differentiate between residential and industrial use assumptions. Method B levels are determined using federal or state ARARs or are based on risk equations specified in MTCA regulations. For individual carcinogens, the cleanup levels are based on the upper bound of the excess lifetime cancer risk of one in one million (1×10^{-6}). Total excess cancer risk under Method B for multiple substances and pathways cannot exceed one in one hundred thousand (1×10^{-5}), and the total hazard index for substances with similar types of toxic response must be less than 1.

Method C cleanup levels are used where Method A and B are not appropriate. One of the following conditions must be met: Method A or B cleanup levels are below area background concentrations; cleanup to Method A or B levels has the potential for creating greater overall threat to human health and the environment than Method C; cleanup to Method A or B is not technically possible; or the site meets the definition of an industrial site. The requirements for qualification as a Method C industrial site are specified in WAC 173-340-740 and -745. Method C cleanups must comply with applicable state and federal laws, must use all practicable levels of treatment and must incorporate institutional controls as specified in WAC 173-340-740 and 720. Risk-based equations for Method C cleanup levels for soil are specified in WAC 173-340-740 for residential and WAC 173-340-745 for industrial exposure assumptions. Method C cleanup standards for groundwater do not currently differentiate between residential and industrial use assumptions and are determined as specified in WAC 173-340-720. Total excess cancer risk for Method C, and the risk associated with individual compounds, cannot exceed 1 in one hundred thousand (1×10^{-5}), and the total hazard index for substances with similar types of toxic response must be less than 1. Method C cleanup levels that protect beneficial uses of groundwater other than drinking water are established by Ecology on a case-by-case basis.

For all three methods of establishing cleanup levels, Ecology must select a "point of compliance" for determining whether the cleanup level has been met. The point of compliance is defined as the point or points throughout the site where cleanup levels are established in accordance with the cleanup requirements for groundwater and soil specified in Sections 173-340-720 and -750. The point of compliance for soil cleanup levels based on the protection of groundwater are to be achieved in all soils throughout the site. For soil cleanup levels based on human exposure via direct contact, the point of compliance shall be established throughout the site from the ground surface to a depth of 15 feet. These depths represent the extent that soils may be potentially excavated or disturbed as a result of site development.

For cleanup alternatives that involve containment of hazardous substances, the soil cleanup levels are not required to be met at the points of compliance described above. WAC 173-340-720(6)(c) provides that where hazardous substances remain on-site as part of the cleanup action, Ecology may approve a conditional point of compliance for groundwater cleanup which shall be as close as practicable to the source of hazardous substances, not to exceed the property boundary. Where a conditional point of compliance is proposed, the person performing the cleanup action must still demonstrate that all practicable methods of treatment are utilized. In these cases, compliance monitoring and other requirements identified in 173-340-360(8) are required to ensure long-term integrity of the containment system.

Potential cleanup levels for groundwater, surface water and soil under MTCA are summarized in Tables 4-3 through 4-5.

State Environmental Policy Act (SEPA) - WAC 197-11, 173-802

SEPA is applicable to remedial actions at the Landsburg Mine site. Ecology is the lead agency for MTCA remedial actions performed under a Consent Decree or an Agreed Order pursuant to WAC 197-11-253.

The SEPA process is triggered when a governmental action is taken on a public or private proposal. According to WAC 197-11-784, a proposal includes both regulatory decisions of agencies and actions proposed by applicants. If the proposal is not "exempt", Ecology will require the submission of a SEPA checklist which solicits information regarding how the proposal will affect elements of the environment, such as air, water, etc.

If the proposal is determined by Ecology to have a "probable significant adverse environmental impact", an environmental impact statement (EIS) will be required which examines potential environmental problems that would be caused by the proposal and options for mitigation. If in Ecology's opinion, there will be no significant adverse environmental impact, a Determination of Nonsignificance (DNS) will be issued and the SEPA process is completed without preparation of an EIS.

Any public comment period required under SEPA must be combined with any comment period associated with the MTCA process in order to expedite and streamline public input. According to WAC 197-11-259, if Ecology makes a determination that the proposal will not have a probable significant adverse environmental impact, the DNS can be issued with the draft Cleanup Action Plan prepared pursuant to MTCA.

Dangerous Waste Regulations - WAC 173-303

The Washington State Dangerous Waste Regulations (WAC 173-303) are the state equivalent of the federal RCRA legislation, and contain a series of rules relating to the generation, handling, storage and disposal of dangerous waste. Recent MTCA amendments, as discussed above, exempt cleanup actions conducted under an Agreed Order or Consent Decree from the procedural requirements of several state laws, including the Hazardous Waste Management Act. Since implementation of the Act is afforded through the Dangerous Waste Regulations, this exemption also applies to the 173-303 rules. In addition, a recent amendment to the state Hazardous Waste Management Act (RCW 70.105) provides a conditional exemption to state-only dangerous wastes generated when a remedial action is conducted pursuant to a Consent Decree with Ecology. The exemption is not applicable to material that is a hazardous waste under RCRA. The Consent Decree must provide management practices for the waste being generated, and must include a treatment or disposal location approved by Ecology. In addition, waste being treated or disposed on site must be managed in a manner approved by Ecology. The amendment also allows "extremely hazardous wastes" to be managed on site as part of a remedial action under a Consent Decree.

Therefore, no WAC 173-303 procedural requirements will be applicable to remedial actions conducted at the site if the actions are conducted pursuant to a Consent Decree or Agreed Order. WAC 173-303 substantive requirements pertaining to dangerous waste generation, handling, storage, and disposal may be applicable, however if non-exempt dangerous waste is generated and/or transported off the site unit boundary during cleanup. Table 4-2 summarizes key elements of the Dangerous Waste Regulations which may be ARARs.

The dangerous waste regulations also include performance standards for closure and post-closure care and monitoring of dangerous waste landfills. Because the Landsburg Mine site stopped receiving waste materials prior to the effective date of this regulation and does not meet the definition of a regulated facility, these requirements of WAC 173-303 are not legally applicable to the site. Some of these regulations are potentially relevant and appropriate, however, to the Landsburg Mine site.

General closure and post-closure standards are given in WAC 173-303-610. Most of the requirements of this section are procedural, and not relevant because of the MTCA exemption for procedural requirements. Subsection 610(2), "Closure performance standard", corresponds to threshold requirements under MTCA. Therefore, the remedy selected by Ecology will satisfy this closure performance standard by definition.

The most relevant portion of Section 610 is subsection (7), "Postclosure care and use of property". This subsection requires 30-year post-closure maintenance and monitoring, including groundwater monitoring "as applicable". Subsection (7)(b)(i) further specifies that Ecology may "Shorten the postclosure care period applicable to the dangerous waste management unit, or facility, if all disposal units have been closed, if it finds that the reduced period is sufficient to protect human health and the environment...." Post-closure use of property is addressed at Section 610(7)(d), and states that post-closure use of property must not be allowed to disturb the integrity of the final cover, unless the disturbance is necessary to the proposed property use and will not increase the potential hazard to human health or the environment, or unless the

disturbance is necessary to reduce a threat to human health or the environment. Section (10) requires a notice in the property deed. The relevant requirements of Section 610(7) and (10) may be appropriate for the Landsburg Mine site.

WAC 173-303-645 regulates releases from regulated units. Although the Landsburg Mine site does not meet the definition of a regulated dangerous waste unit, the requirements of this section are relevant. Portions of this section may be appropriate, such as:

- Groundwater protection standard, 645(3)
- Compliance period, 645(7)
- General groundwater monitoring requirements, 645(8)
- Detection monitoring program, 645(9)
- Compliance monitoring program, 645(10).

The relevance and appropriateness of these sections will be considered in the preparation and review of the Compliance Monitoring Program required under MTCA.

Design standards specific to dangerous waste landfills are found in WAC 173-303-665. Of these, liner and operating standards are not relevant to closure of the Landsburg Mine site. Potential leachate will be addressed by groundwater monitoring pursuant to the approved MTCA Compliance Monitoring Program. Section 665(6) addresses closure and post-closure care, which is relevant to this site. The design standard for the final cover, which may or may not be appropriate for this site, consists of the following [WAC 173-303-665(6)(a)]:

> "(i) Provide for long-term minimization of migration of liquids through the closed landfill
> (ii) Function with minimum maintenance;
> (iii) Promote drainage and minimize erosion or abrasion of the cover;
> (iv) Accommodate settling and subsidence so that the cover's integrity is maintained; and
> (v) Have a permeability less than or equal to the permeability of any bottom liner system or natural subsoils present."

Minimum Functional Standards for Solid Waste Handling - WAC 173-304

WAC 173-304 ("Minimum Functional Standards for Solid Waste Handling") (MFS) describes requirements for the management of solid waste. WAC 173-304-407 and -460 describe closure and post-closure standards and landfill standards, respectively. WAC 173-340-710 specifies that the MFS are the "minimum requirements" for landfill closure conducted as a MTCA cleanup action. On this basis, the MFS are applicable to the site. Capping requirements under WAC 173-304-460 include a minimum 2 ft. thick clay layer having a permeability of 1×10^{-6} or lower. Alternately, a synthetic liner material may be substituted for the soil layer. The MFS standards are the primary capping criteria to consider in the FS.